REMARKS

Introduction

The present application has been carefully studied and amended in view of the outstanding Office Action dated December 15, 2009, and reconsideration of that Action is requested in view of the following comments.

A petition for a three-month extension of time accompanies this response together with the appropriate fee. Accordingly, the deadline for responding to the Office Action has been extended until June 15, 2010, and this response is therefore timely filed.

Status of claims

Claims 1 to 4, 6, and 7 were pending in the application.

Claims 1 to 4, 6, and 7 have been rejected.

Claims 1 and 4 have been currently amended.

Claims 2, 3, and 7 have been cancelled.

Claims 1, 4 and 6 are currently pending.

Amendments to Claims

Claim 1 has been amended by incorporating the compositions of the pigment concentrates prepared according to the method of use of claim 1, which is disclosed on page 6, lines 13 to 22, of the specification. Claim 1 has further been amended by including the characterization of monomers **A1** and **A2** including mass fraction of **A2** in the mixture of **A1** and **A2** as taken from page 2, last paragraph, until page 3, second paragraph (paragraphs [0010] and [0011] from the Patent Application Publication, US 2006/0 183 854 A1, of the present application).

Claim 4 has been amended to correct its dependence due to incorporation of the subject matter of claim 2 into claim 1.

It is deemed that no new matter has been added by such amendments. It is also deemed that no further search or consideration will be necessitated by this amendment, and entry thereof is therefore respectfully requested.

The Office Action

Rejection under 35 U.S.C. 103 (a) over the Dworak et al. US 2002/0 077 389 A1 ("Dworak")

Dworak discloses an aqueous binder mixture that comprises a water-dilutable resin and a water-miscible hydroxyurethane. See column 1, paragraph [0005]. The water-dilutable resins are condensation products of acid functional resins **A** and hydroxy-functional resins **B**. The acid functional resin **A** may be an acrylic copolymer, and the hydroxy-functional resin **B** may be a hydroxy-functional polyester. No data is given related to the quantitative composition of the monomer mixture employed to make the acrylic copolymers A5 of Dworak. There are also no examples in Dworak for acrylic copolymers A5 where such information can be drawn.

In the present invention, the object is to provide dispersing agents for the preparation of water-dilutable pigments concentrates that overcome the disadvantage of coatings made with pigment dispersing agents of the prior art, which coatings have unsatisfactory water resistance.

It can be seen (see Table 8, result for Example E1) that the water resistance was improved when a hydrophobic polyester resin **B** was used as a component of the condensation products **AB**, and also an improvement in both corrosion resistance tests (humidity cabinet and salt spray test) was found. Moreover, it was found in the experiments underlying the present invention that for inorganic, organic and also carbon black based pigments, very good storage stability (at least three months at room temperature) was found for pigment pastes prepared with the selected condensation resins **AB** according to the present invention.

This could not have been expected from Dworak which only deals with increasing the mass fraction of solids in primer surface formulations, and does not provide a teaching, motivation, or suggestion to introduce the features as now particularly pointed out and distinctly claimed in the amended claims of the instant application, and thereby arrive at the

advantageous properties provided by the method of use as claimed to prepare a pigment concentrate.

The pigment concentrate according to the invention comprises per 100 g of concentrate, in the case of inorganic pigments, from 40 g to 70 g of pigment, and from 5 g to 20 g of the condensation resin **AB**. Dworak has three examples of pigmented compositions according to the claims of the said reference, viz. paints 1, 2 and 3 which are made from binders 3, 7, and 10. These have all 60 g of titanium dioxide as inorganic pigment, and 197.8 g, 194.8 g and 190.3 g of the binder. See table 3 of Dworak. Binder 10 is a water dilutable polyester AIII, and not a condensation resin. This is therefore not taken into account, and only paints 1 and 2 remain.

The composition of binder 3 is disclosed in table 2 as condensation product of 25 g of AI and 45 g of BI, with admixed resin C (30 g). The mass fraction of solids in binder 3 is 45.5 %. Therefore, 197.8 g of binder contain 197.8 g × 45.5 % × (45 g + 25 g) / (45 g + 25 g + 30 g) = 63 g. The mass of pigment in paint 1 of table 3 (60 g) is therefore smaller than the mass of condensation resin (63 g of solid condensation resin). For inorganic pigments, according to amended claim 1 of the present invention, the mass of pigment is at least twice of that of binder (lowest mass of pigment in 100 g of pigment concentrate is 40 g, and the highest mass of condensation resin binder is 20 g).

The same can be inferred from paint 2, where the mass of titanium dioxide is also 60 g in each case, and the mass of condensation resin is for paint 2 (binder 7): 194.8 g × 46.2 % × (20 g + 50 g) / (20 g + 50 g + 30 g) = 63.0 g.

Therefore, Dworak does not render obvious the subject matter of the present invention as now defined in amended claim 1, and it also teaches away from it, by teaching masses of condensation resin that are higher than those of inorganic pigments.

It is therefore deemed that this ground of rejection has been rendered moot by the amendments and arguments as presented.

Rejection under 35 U.S.C. 103 (a) over the combination of Dworak et al. US 2002/0 077 389 A1 ("Dworak") and Awad et al. US 4,996,250 A ("Awad")

Awad is directed to a water-dilutable coating composition, comprising mass fractions of :

(A) from 4 % to 95 % of a water-dilutable alkyd resin which has a mass fraction of from 30 % to 70 % of oxidatively-drying fatty acids, and in which at least 80 % of the free carboxyl groups corresponding to an acid number of from 25 mg/g to 75 mg/g originate from methacrylic acid units which units are grafted onto at least part of the fatty acids, together with additional vinyl and/or (meth)acrylic monomers,

(B) from 4 % to 95 % of an aqueous polymer dispersion based on (meth)acrylic acid esters and/or butadiene and/or styrene copolymers, and/or an aqueous polyurethane dispersion, and

(C) from 1 % to 30 % of an adduct of maleic acid anhydride with drying oils and/or with the unsaturated fatty acids which are synthesised from such oils and/or with synthetically produced esters of such fatty acids with diols or polyols, the anhydride structures of the adduct being opened by water and/or a monoalcohol having from 1 to 10 carbon atoms, and which has an acid number of between about 40 mg/g and 280 mg/g, the sum of the mass fractions of components (A) to (C) being 100 %.

Dworak is different for the same reasons discussed above.

Awad teaches to make air-drying protective coating compositions by mixing of alkyd resins (A) as one of the components of the coating composition, an aqueous polymer dispersion (B) which may be a dispersion of a copolymer of acrylic monomers, butadiene, and styrene, or a polyurethane dispersion, and an adduct (C) of maleic anhydride with drying oils or fatty acids or esters thereof. Component (A) is used to prepare a pigment paste which is then completed with components (B) and (C) to form a paint. Component (A) is a reaction product of a fatty acid

copolymer (A1) with an esterification product of polyalcohols having from 2 to 6 hydroxyl groups, aromatic or aliphatic dicarboxylic acids, optionally, cyclic or polycyclic monocarboxylic acids and further optionally, polyethylene glycol.

In example I of Awad, (A) is made from a fatty acid copolymer (A1) which is then reacted with the esterification product of safflower fatty acid, isomerised linolic acid, pentaerythritol which is a branched tetrafunctional alcohol, and isophthalic acid.

There are no data on stability of pigment pastes prepared with such resins (A), and no teaching, suggestion or motivation could be drawn from this reference to lead to use of a condensation resin **AB** according to the invention as paste resin for dispersion of inorganic, organic and carbon black pigments with improved stability leasing to coating compositions with improved water and corrosion resistances.

For these reasons, the combination of Dworak and Awad does not render obvious the present invention as defined in amended claims 1, 4 and 6. Withdrawal of this ground of rejection is respectfully requested.

Conclusion

It is therefore deemed that the subject matter of the present invention as now claimed is neither anticipated by, nor obvious over, the cited state of the art, or any combinations thereof, and favorable reconsideration is respectfully requested.

Respectfully submitted,

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